Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An apparatus for treating a workpiece with a plasma, comprising:

a ~~vacuum~~ chamber having a processing space;

a gas supply port in ~~fluid communication with~~ said ~~vacuum~~ chamber~~, said gas supply operable to selectively provide~~ for introducing a process gas into said processing space;

~~a vacuum source coupled by~~ a vacuum port in said chamber for evacuating ~~for fluid communication with said vacuum chamber~~ said processing space;

a workpiece-holding portion positioned in [[the]] said processing space and configured for ~~receiving and supporting~~ holding the workpiece;

a plasma excitation source operable for exciting the process gas in said processing space to generate a plasma;

[[a]] an electrically-insulated vacuum distribution baffle positioned between said vacuum port and said workpiece-holding portion~~, said vacuum distribution baffle being formed from an electrically insulating material~~; and

~~an electrical feedthrough extending through said vacuum distribution baffle; and~~

a powered electrode ~~positioned between said vacuum distribution baffle and said workpiece holding portion and between said vacuum distribution baffle and said vacuum port, said powered electrode~~ electrically connected to said plasma excitation source ~~by said electrical~~

~~feedthrough and said powered electrode in electrical continuity with~~ and said workpiece-holding portion and positioned between said vacuum distribution baffle and said workpiece holding portion, ~~said powered electrode being electrically shielded from said vacuum chamber by said vacuum distribution baffle~~ said vacuum distribution baffle positioned between said powered electrode and said vacuum port to electrically shield said powered electrode from said chamber.

2. (Original) The apparatus of claim 1, wherein said powered electrode is part of an assembly which includes said workpiece-holding portion.

3. (Previously Presented) The apparatus of claim 1, wherein said workpiece-holding portion includes first and second side rails that are adjustable in width to accommodate workpieces of different widths positioned therebetween.

4. (Currently Amended) The apparatus of claim 1, wherein the chamber further comprises a lid and a lower chamber portion and a [[seal]] sealing member therebetween, said lid being connected to said lower chamber portion by a hinge having at least one obround bearing groove for accommodating substantially vertical compression of ~~the seal~~ said sealing member as ~~vacuum pressure is applied~~ said processing space is evacuated through said vacuum port.

5. (Original) The apparatus of claim 1 further comprising a ground electrode positioned on an opposite side of said workpiece holding portion relative to said powered electrode.

6. (Currently Amended) The apparatus of claim 5, wherein said powered electrode and said ground electrode are approximately equidistant from said workpiece holding portion, said electrodes producing an electric field substantially perpendicular to [[said]] the workpiece when said workpiece is ~~received~~ held in said workpiece holding portion.

7. (Currently Amended) The apparatus of claim 6, wherein said chamber includes a lid movable between open and closed positions for ~~introducing and removing the workpiece to and from~~ accessing said workpiece holding portion, said lid further comprising said ground electrode.

8. (Cancelled)

9. (Currently Amended) The apparatus of claim 1, wherein said chamber includes a lid movable between open and closed positions for ~~introducing and removing the workpiece to and from~~ accessing said workpiece holding portion, and said ~~lid further including~~ said ~~process~~ gas [[inlet]] supply port positioned in said lid for introducing process gas to said processing space.

10. (Currently Amended) The apparatus of claim 9, wherein said lid includes an interior surface facing said workpiece holding portion of said processing space when said lid is in said closed position, and said ~~process~~ gas [[inlet]] supply port further comprises a gas distribution space within said lid and an array of apertures on said interior surface configured to uniformly distribute the process gas from said gas distribution space onto the workpiece.

11. (Currently Amended) An apparatus for treating a workpiece with plasma, comprising:

a chamber having a chamber base, an access member movable relative to said chamber base between an open position and a closed position, ~~an interior workpiece holding portion~~ a processing space defined inside said chamber and configured to ~~receive~~ hold the workpiece, and a sealing member between said chamber base and said movable access member to seal said ~~interior workpiece holding portion~~ processing space when said access member is in said closed position;

a gas supply port in ~~fluid communication with the vacuum~~ said chamber~~, said gas supply operable to selectively provide a process gas into the interior of said chamber~~ for introducing a process gas into said processing space;

an electrode assembly positioned within said chamber and ~~in electrical continuity~~ electrically coupled with said workpiece holding portion;

a plasma excitation source operably connected to said electrode assembly for exciting the process gas within said ~~chamber~~ processing space to generate a plasma;

~~a vacuum source coupled by~~ a vacuum port in said chamber for evacuating ~~for fluid communication with said vacuum chamber~~ said processing space; and

a hinge coupling said chamber base to said access member, said hinge including at least one obround bearing groove for accommodating substantially vertical compression of [[the]] said sealing member as ~~vacuum pressure is applied~~ said processing space is evacuated through said vacuum port.

12. (Currently Amended) The apparatus of claim 11, wherein said sealing member is electrically conductive so that said access member and said chamber base are in electrical continuity when [[the]] said access member is in [[a]] said closed position.

13. (Original) The apparatus of claim 11, wherein said obround bearing includes an opening having a substantially oval cross-sectional profile, said opening receiving a hinge pin of said hinge coupling.

14. (Currently Amended) An apparatus for processing a workpiece with a ~~process gas~~ plasma, comprising:

a chamber having a processing space and a workpiece holding portion configured to ~~receive~~ hold the workpiece in said processing space;

a gas supply port in ~~fluid communication with~~ said ~~vacuum~~ chamber~~, said gas supply operable to selectively provide~~ for introducing a process gas into said processing space;

a vacuum port in said chamber for evacuating said processing space;

a powered electrode positioned on one side of said workpiece holding portion;

a plasma excitation source operably connected to said powered electrode assembly for exciting the process gas within said processing space to generate a plasma; and

a ground electrode positioned on an opposite side of said workpiece holding portion relative to said powered electrode, said powered electrode and said ground electrode being approximately equidistant from said workpiece holding portion, and said powered and ground electrodes together producing an electric field substantially perpendicular to said workpiece for exciting the process gas when [[said]] the workpiece is received in said workpiece holding portion.

15. (Currently Amended) The apparatus of claim 14, wherein said chamber includes a lid movable between open and closed positions for ~~introducing and removing the workpiece to and~~

~~from~~ accessing said workpiece holding portion of said processing space, said lid further comprising said ground electrode.

16. (Currently Amended) The apparatus of claim 15, wherein said lid further includes a ~~process~~ gas [[inlet]] supply port for introducing the process gas to said processing space.

17. (Currently Amended) The apparatus of claim 16, wherein said lid includes an interior surface facing said workpiece holding portion of said processing space when said lid is in said closed position, and said ~~process~~ gas [[inlet]] supply port further comprises a gas distribution space within said lid and an array of apertures on said interior surface configured to uniformly distribute the process gas from said gas distribution space [[onto]] across the workpiece.

18. (Currently Amended) An apparatus for treating a workpiece with plasma, comprising:

a chamber having a processing space with a workpiece holding portion configured to ~~receive~~ hold the workpiece;

~~a gas supply in fluid communication with the vacuum chamber, said gas supply operable to selectively provide a process gas into said processing space;~~

a plasma excitation source operable for exciting [[the]] a process gas in the processing space to generate a plasma;

a vacuum ~~source coupled for fluid communication with~~ port for evacuating said processing space;

an electrode assembly positioned within said processing space for directing an electric field relative to said workpiece holding portion ~~of said processing space~~;

a lid coupled with said chamber and movable between open and closed positions for ~~introducing and removing the workpiece to and from~~ accessing said workpiece holding portion ~~of said processing space~~; and

a ~~process~~ gas ~~inlet~~ supply port in said lid and coupled in fluid communication with said processing space for introducing the process gas into said processing space when said lid is in said closed position.

19. (Currently Amended) The apparatus of claim 18, wherein said lid includes an interior surface facing said workpiece holding portion ~~of said processing space~~ when said lid is in said closed position, and said ~~process~~ gas [[inlet]] supply port further comprises a gas distribution space within said lid and an array of apertures on said interior surface configured to uniformly distribute the process gas from said gas distribution space [[onto]] across the workpiece.

20. (Withdrawn) A method for treating a workpiece with a plasma, comprising:

positioning a workpiece on a workpiece-holding portion within a processing space of a vacuum chamber, said vacuum chamber having an interior surface facing said workpiece holding portion, wherein said interior surface including an array of apertures configured to uniformly distribute said process gas about said surface of said workpiece;

evacuating the processing space;

initiating a flow of a process gas through said array of apertures into the processing space, wherein said flow lines of process gas are symmetrical over the surface of the workpiece; and

applying plasma excitation power to create a plasma from the process gas in the processing space.

21. (Withdrawn) A method for treating a workpiece with a plasma, comprising:

positioning a workpiece on a workpiece-holding portion within a processing space of a vacuum chamber;

initiating a flow of a process gas into said processing space

evacuating the processing space through a vacuum port in fluid communication with said vacuum chamber, said chamber further including a vacuum distribution baffle positioned between said vacuum port and said workpiece-holding portion, wherein said baffle provides symmetrical lines of flow of said process gas over said surface of said workpiece; and

applying plasma excitation power to create a plasma from the process gas in the processing space.

22. (Withdrawn) The method of claim 21, wherein said vacuum distribution baffle comprises an electrically-insulating material and said baffle is operable to confine said plasma to a portion of said processing space adjacent said workpiece holding portion.

23. (Withdrawn) A method of operating a plasma treatment system comprising:

transferring a workpiece to be processed into a processing chamber;

decreasing pressure within the processing chamber;

initiating a flow of process gases into the processing chamber;

applying an RF power of a relatively-low power level to electrodes within the processing chamber to create a gas plasma, thereby initiating a plasma treatment cycle;

matching an impedance of an RF system including the electrodes at the relatively-low power level to a desired impedance;

increasing RF power to the electrodes from the relatively-low power level to a relatively-high power level;

continuously matching the impedance of the RF system to the desired impedance while increasing the RF power to the electrodes;

maintaining the RF power at the relatively-high power level;

continuously matching the impedance while maintaining the RF power to the electrodes at or near the relatively-high power level;

detecting an end of the plasma treatment cycle; and

terminating the flow of process gases to the processing chamber and the application of RF power to the electrodes after detecting the end of the plasma treatment cycle.

24. (Withdrawn) The method of operating a plasma treatment system of claim 23 further comprising decreasing RF power to the electrodes in response to detecting an end of the plasma treatment cycle.

25. (Withdrawn) The method of operating a plasma treatment system of claim 23 further comprising increasing RF power to the electrodes at a maximum rate permitting a continuous matching of the impedance of the RF system to the desired impedance.

26. (Withdrawn) The method of operating a plasma treatment system of claim 25 further comprising decreasing RF power to the electrodes at a rate substantially equal to the maximum rate.

27. (Withdrawn) The method of operating a plasma treatment system of claim 23 further comprising increasing RF power to the electrodes over a shortest period of time while permitting a matching of the impedance of the RF system to the desired electrodes.

28. (Withdrawn) The method of operating a plasma treatment system of claim 27 further comprising decreasing RF power to the electrodes over substantially the shortest period of time.

29. (Withdrawn) The method of operating a plasma treatment system of claim 23 further comprising increasing the pressure within the processing chamber after detecting the end of the plasma treatment cycle.

30. (Withdrawn) A method of operating a plasma treatment system comprising:

transferring a workpiece to be processed into a processing chamber;

evacuating the processing chamber to an upper pressure limit;

initiating a flow of process gases into the processing chamber;

applying RF power to electrodes within the processing chamber to create a gas plasma, thereby initiating a plasma treatment cycle;

matching an impedance of an RF system including the electrodes to a desired impedance;

continuing to evacuate the processing chamber during the plasma treatment cycle to a pressure greater than or equal to a lower pressure limit while continuously matching the impedance of the RF system to the desired impedance;

detecting an end of the plasma treatment cycle; and

terminating the flow of process gases to the processing chamber and the application of RF power to the electrodes after detecting the end of the plasma treatment cycle.

31. (Withdrawn) The method of operating a plasma treatment system of claim 30 further comprising the steps of monitoring pressure within the processing chamber at least between the upper and lower pressure limits and controlling the flow of process gases into the processing chamber based on the monitored pressure.

32. (Withdrawn) The method of operating a plasma treatment system of claim 30 wherein the upper pressure limit equals a normally used processing pressure value plus an incremental offset pressure value.

33. (Withdrawn) The method of operating a plasma treatment system of claim 32 wherein the lower pressure limit equals the normally used processing pressure value minus the increment offset pressure value.

34. (Withdrawn) The method of operating a plasma treatment system of claim 33 further comprising increasing pressure in the processing chamber after detecting the end of the plasma treatment cycle.

35. (Withdrawn) A method of operating a plasma treatment system comprising:

transferring a workpiece to be processed into a processing chamber;

operating a vacuum system to decrease pressure within the processing chamber to a first partial vacuum;

operating a mass flow controller to initiate a flow of process gases into the processing chamber;

operating in response to the first partial vacuum in the chamber an RF generator to apply RF power of a lesser, first power level to electrodes within the processing chamber to create a gas plasma, thereby initiating a plasma treatment cycle;

operating a tuning network to match an impedance of an RF system including the RF generator and the electrodes to a desired impedance with the electrodes being supplied the first power level;

operating the RF generator to increase RF power to the electrodes to a greater, second power level;

operating the tuning network to match the impedance of the RF system to the desired impedance with the electrodes being supplied with the second power level;

operating the RF generator to maintain the RF power at the greater, second power level;

operating the vacuum system and the mass flow controller to decrease pressure within the processing chamber to a second partial vacuum;

continuously operating the tuning network to match the impedance of the RF system to the desired impedance while maintaining the RF power to the electrodes at the greater, second power level;

detecting an end of the plasma treatment cycle;

operating the mass flow controller to terminate the flow of process gases to the processing chamber after detecting the end of the plasma treatment cycle;

operating the RF generator to terminate the application of RF power to the electrodes after detecting the end of the plasma treatment cycle; and

increasing pressure within the processing chamber to approximately atmospheric pressure.

36. (Withdrawn) The method of operating a plasma treatment system of claim 35 further comprising operating the RF generator to increase the RF power to the electrodes at the highest rate permitting an operation of the tuning network to continuously match the impedance of the RF system to the desired impedance.

37. (Withdrawn) The method of operating a plasma treatment system of claim 36 further comprising monitoring pressure within the processing chamber between upper and lower pressure limits.

38. (Withdrawn) The method of operating a plasma treatment system of claim 37 further comprising operating the vacuum system to decrease the pressure in the processing chamber to the second partial vacuum substantially simultaneously with detecting the end of the plasma treatment cycle.

39. (Withdrawn) The method of operating a plasma treatment system of claim 38 further comprising operating the RF generator to decrease RF power to the electrodes from the greater, second magnitude to the lesser, first magnitude after detecting the end of the plasma treatment cycle.

40. (Withdrawn) The method of operating a plasma treatment system of claim 39 further comprising operating the tuning network to continuously match the impedance of the RF system to the desired impedance while decreasing the RF power to the electrodes.

41. (Withdrawn) The method of operating a plasma treatment system of claim 40 further comprising providing a delay period operating the tuning network to continuously match the impedance of the RF system to the desired impedance while decreasing the RF power to the electrodes.

42. (Withdrawn) The method of operating a plasma treatment system of claim 35 further comprising opening a bleed valve to increase pressure within the processing chamber to substantially atmospheric pressure.

43. (Withdrawn) The method of operating a plasma treatment system of claim 35 further comprising providing a delay period between operating the RF generator to apply RF power of the first magnitude and operating the tuning network to match an impedance of an RF system to a desired impedance with the electrodes being supplied the first magnitude of RF power.

44. (New) The apparatus of claim 1 wherein said chamber includes a wall, and further comprising:

an electrical feedthrough extending through said wall of said chamber and electrically coupled with said powered electrode.

45. (New) The apparatus of claim 44 wherein said electrical feedthrough extends through said vacuum distribution baffle.